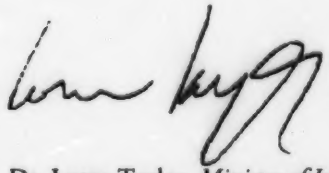
Innovation and Science

ACCOUNTABILITY STATEMENT

This Business Plan for the three years commencing April 1, 2000 was prepared under my direction in accordance with the *Government Accountability Act* and the government's accounting policies. All of the government's policy decisions as at February 1, 2000 with material economic or fiscal implications of which I am aware have been considered in preparing the Business Plan.

The Ministry's priorities outlined in the Business Plan were developed in the context of the government's business and fiscal plans. I am committed to achieving the planned results laid out in this Business Plan.



Dr. Lorne Taylor, *Minister of Innovation and Science*
February 3, 2000

MESSAGE FROM THE MINISTER

I am pleased to present the three-year business plan for the Ministry of Innovation and Science, outlining activities and plans relating to research, science, and technology in the province of Alberta.

While today's rapid pace of change is making it more and more difficult to plan ahead, I believe that the activities and investments outlined in this plan will help to create a framework for sustainable prosperity for all Albertans.

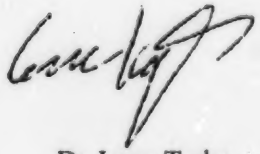
The key to economic success in this era of change is innovation. We must embrace new ideas if we are to become leaders in the global, knowledge-based economy.

The creation of this ministry in May 1999, reflects the Government's commitment to strengthening innovation and ensuring Albertans have the tools and the environment to help them thrive in the 21st century.

I am committed to ensuring that, over the next few years, we will move ahead and invest in areas that will help to secure a prosperous future for all Albertans. This business plan outlines long-term goals and strategies that will support activities in Alberta's research community and nurture the innovative spirit that will make this province a prominent and recognized leader in the global economy.

The key priorities for the Department of Innovation and Science, and its reporting agencies and organizations for the next three years include major initiatives and investments in areas of information and communications technology; life sciences and related technologies; climate change; as well as research activities in the sectors of agriculture, forestry, and energy. As well, government is responding to the recommendations of the 1997 *Growth Summit* and the 1999 *Roundtable on University Research* by creating the Alberta Heritage Foundation for Science and Engineering Research (AHFSER), recognizing that stable, long-term funding for research and development is critical to sustainable prosperity.

We believe that focusing on these priorities and investing in activities aimed at the future will have an impact on all Albertans. While it may be difficult to know all of the answers in a constantly changing world, Innovation and Science is dedicated to inspiring and enabling Albertans to find solutions that will help improve the economy and quality of life in our province and around the world.



Dr. Lorne Taylor

Minister

INVESTIGATING A BRIGHTER FUTURE THROUGH INNOVATION AND SCIENCE

The creation of the Ministry of Innovation and Science consolidates government's scientific research, development and application activities.

This strategic move brings the following entities "under one roof":

- Alberta Science, Research and Technology Authority (ASRA),
- Alberta Research Council (ARC),
- Alberta Energy Research Institute (AERI), (legislation pending, formerly AOSTRA)
- Alberta Agricultural Research Institute (AARI),
- Information Management and Technology Services,
- Office of the Chief Information Officer,
- Information and Communications Technologies, and
- University Research and Grant Programs.

Innovation and Science is unique in its organizational make up. Department staff work closely with boards whose representatives come from the private sector and industry. This structure allows for increased integration and efficiency of government research and development expenditures, technology commercialization and development of knowledge industries.

INTRODUCTION

Alberta's innovation system embodies not only research and development, but also the dissemination, commercialization and application of knowledge and technology. It includes human capital (people and skills), infrastructure, financial capital and a supportive business, social and political environment. The imaginative people who create and apply knowledge in new ways to improve the quality of Alberta's economy, communities, and environment are the heart of the innovation system, which is composed of thousands of people working in hundreds of institutions and businesses across the province.

Growth and development of Alberta's innovation system is critical to the well being and future prosperity of this province. Government, universities, and private enterprises all play important roles in converting research and technology into products and services that produce socio-economic benefits for Albertans.

OUR VISION

Alberta will be recognized locally and globally as a world leader in the development and application of science and technology that improves the well being and prosperity of its people and improves its communities and natural environment.

OUR MISSION

To enhance the contribution of science, research, and information and communications technology to the sustainable prosperity and quality of life of all Albertans.

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OUR CORE BUSINESSES

1. Science and Research

   Science and Research involves:

   - managing and funding strategic investments in science and research,
   - coordinating government science and research,
   - providing strategic leadership for science and research in Alberta, and
   - promoting a science culture in Alberta.

2. Technology Business and Industry Growth and Development
   - Increasing the "knowledge industry" component of the Alberta economy by growing, attracting and retaining firms.
   - Increasing the application of technology throughout the economy.

3. Government Information Technology

   Government Information Technology ensures that the Government of Alberta is exemplary in the efficient and effective use of information and information and communications technology in providing services to all Albertans:

   - coordinating the effective use of computer technology, voice and data networks, information systems and records management within government,
   - establishing cross-government policies and standards for information and communications technology (ICT) to improve the efficiency and flexibility of government,
   - identifying, facilitating and providing cross-government solutions for ICT, and
   - identifying and promoting best practices through cross-government initiatives.

LINKAGES TO GOVERNMENT'S CORE BUSINESS AND GOALS

While Alberta's economy is still anchored to the traditional natural resource sectors of energy, agriculture and forestry, the new Ministry of Innovation and Science will move to diversify the provincial economy - particularly in the information and communications technology sector. New technology and innovation will be the drivers for our economy. Working in conjunction with other government departments, Economic Development in particular, Innovation and Science will implement the economic development plan and strategy to ensure all Albertans have the opportunity to take their entrepreneurial spirit across the globe.

Innovation and Science is one of three lead departments working on government's updated economic strategy, *Get Ready Alberta*. This strategy responds to important trends in our changing world to ensure that Alberta's future will be one of boundless opportunity.

As well, Innovation and Science will be working with Treasury and other departments to establish a legacy for the future with an endowment fund for science and engineering research. This new endowment fund, the Alberta Heritage Foundation for Science and Engineering Research (AHFSER) will attract investment, recruit top researchers from around the world and give our young people at universities and colleges the chance to train with some of the best minds in science using the latest technologies.

Science, research, and information and communications technology contribute to each of the three core businesses identified within the Alberta Government's Business Plan:

PEOPLE

The well being of Albertans will be sustained through the innovative application of knowledge and technology.

PROSPERITY

Alberta's economy will be sustainable and competitive through innovation, creation and use of knowledge and technology.

PRESERVATION

The well being of Alberta's communities and natural environment will be sustained through application of knowledge and technology.

ACRONYMS USED IN THIS BUSINESS PLAN:

AERI	Alberta Energy Research Institute
AHFSER	Alberta Heritage Foundation for Science and Engineering Research
ARC	Alberta Research Council
ASRA	Alberta Science, Research and Technology Authority
ICT	Information and Communications Technology
R & D	Research and Development
WEPA	Western Economic Partnership Agreement

GOAL 1: ALBERTA HAS A HIGHLY QUALIFIED WORKFORCE TO SUPPORT INNOVATION AND SCIENCE

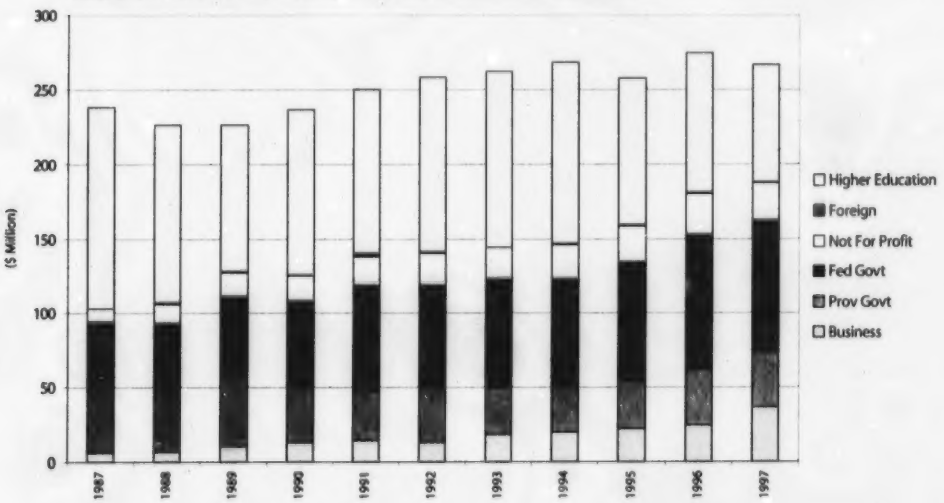
OBJECTIVES	STRATEGIES
• Increase the number of knowledge workers in the Alberta economy. • Maintain and enhance faculty and graduate student quality and research excellence at universities and teaching hospitals. • Create 35,000 new jobs in the information and communications technology sector by 2005. • Increase the number of K-12 students who consider technology as a viable career opportunity.	• Support university efforts to attract and keep talented researchers in areas of identified strengths through the Research Excellence Envelope. • Through iCORE (Informatics Circle of Research Excellence) attract and grow a critical mass of outstanding researchers in the fields of computer science, electrical and computer engineering, physics, mathematics and other ICT-related disciplines. • Continue to support and enhance COURSE (Coordination of University Research for Synergy and Effectiveness) with key stakeholders. • Select and fund research proposals that offer potential to train young researchers. • Create the Alberta Heritage Foundation for Science and Engineering Research (AHFSER) to ensure a strong, long-term base of science and engineering research at our post-secondary institutions and in the industrial sector, to expand Alberta's emerging knowledge-based economy.

KEY PERFORMANCE MEASURES

Total Sponsored Research Funding (overall and by source)

The ability of universities and teaching hospitals to attract research funding is an indicator of the quality of their faculty and their research programs. The more funding these institutions can attract, the better able they are to attract and retain world-class researchers. World-class researchers, in turn, attract a critical mass of talent. Targets will be included in the 2001-04 business plan.

ALBERTA UNIVERSITY RESEARCH FUNDING BY SOURCE



Source: Most current data from Statistics Canada

Alberta ICT Advantage

Information and Communications Technology (ICT) is the world's strongest, fastest-growing economic sector. We want to create 35,000 new jobs in Alberta's ICT sector by 2005. Use results of survey products currently being fielded by Statistics Canada.

	1998 Actual[1]	1999-2000 Estimate	2004-05 Target[2]
Number of jobs in Alberta's ICT sector	35,000 to 40,000	40,000	75,000

[1] **Source:** *Information and Communications Technology: A Strategy for Alberta*

[2] Target also is consistent with government's economic strategy, *Get Ready Alberta.*

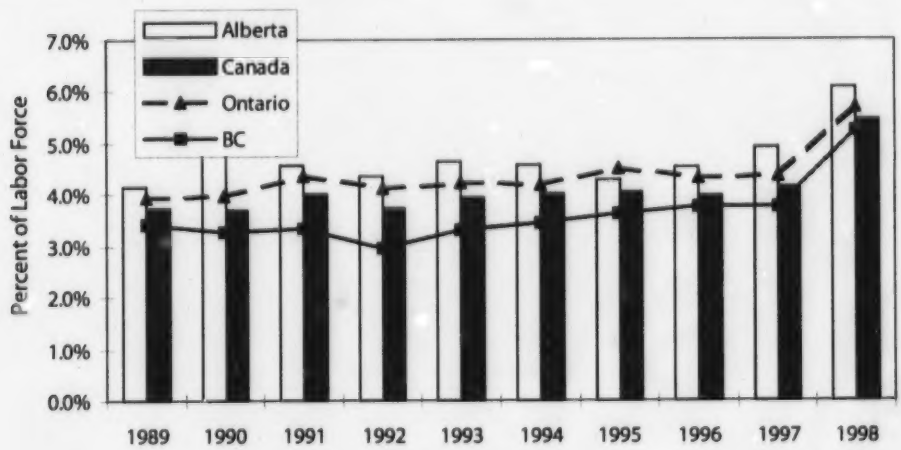
SUPPLEMENTARY PERFORMANCE MEASURE

Develop a measure showing the number of grade 12 students who have completed course requirements for entry into science and technology programs at the post-secondary level. Compare this with how many grade 12 students actually enter these programs.

Indicator: Scientists and Engineers as a Percentage of the Labour Force

Scientists and engineers play a critical role in the Innovation-Based economy as creators and implementers of the new ideas that result in new processes and new products. "Scientists and engineers as a percentage of the labour force" is one of the main indicators of the strength of Alberta's Human Capital Capacity. Strong Human Capital Capacity contributes to achieving growth in the innovation-based economy.

SCIENTISTS AND ENGINEERS



Source: Statistics Canada

GOAL 2: ALBERTA HAS A QUALITY SCIENCE, RESEARCH, AND INFORMATION AND COMMUNICATIONS TECHNOLOGY INFRASTRUCTURE

OBJECTIVES	STRATEGIES
• Maintain and enhance the excellence of Alberta's science and research infrastructure. • Provide services and expertise that enable and support effective management and delivery of information, and information and communications technology within government. • Promote the continued development of Alberta's ICT infrastructure.	• Make strategic investments to help modernize the research infrastructure in Alberta through the Science and Research Fund. • Make strategic investments to help modernize the research infrastructure at Alberta universities and teaching hospitals through the Intellectual Infrastructure Partnership Program. • Leverage investment in the Alberta Research Council. • Facilitate investment by the public and private sectors in programs designed to expand research and technology development capacity (infrastructure) in the province. • Provide reliable, cost-effective, province-wide information technology and shared network services. • Continue to achieve overall savings to taxpayers by working with extended stakeholders to develop solutions for their telecommunication requirements. • Develop and distribute an awareness package for Alberta businesses on how they can use electronic commerce to enhance competitiveness. • Continue to work with Economic Development and International and Intergovernmental Relations to implement projects approved under the Western Economic Partnership Agreement (WEPA) Phase III in the area of technology and innovation infrastructure. • Work with other government departments to develop a high-speed technology infrastructure so that all Albertans can access government services.

KEY PERFORMANCE MEASURES

High-Speed Connections

Identify the degree to which homes, businesses and schools have access to a high-speed internet infrastructure to which they can connect if they so choose. Use results of survey products currently being fielded by Statistics Canada.

Infrastructure Availability	1999-2000	2002-03 Targets[1]	2004-05 Targets[2]
Homes	Collecting baseline data.	80%	100%
Businesses		95%	100%
Schools		100%	100%

[1] 2002-03 targets reflect goals identified in *Information and Communications Technology: A Strategy for Alberta.*

[2] 2004-05 targets are consistent with government's economic strategy, *Get Ready Alberta.*

Research and Technology Infrastructure

Develop a new measure to assess the quality and quantity of research and technology infrastructure at universities, teaching hospitals, and industrial and public research facilities. Use appropriate comparators.

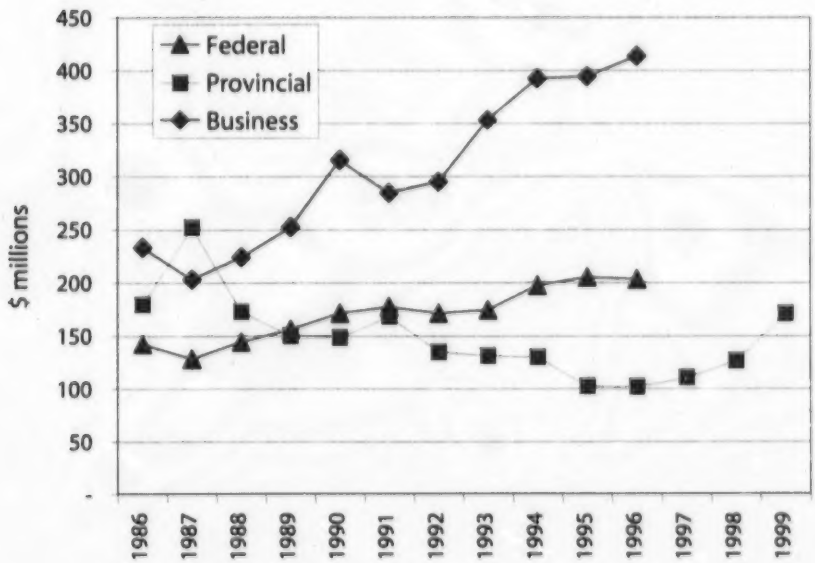
GOAL 3: ALBERTA HAS AN INTERNATIONALLY COMPETITIVE SCIENCE AND RESEARCH SYSTEM

OBJECTIVES	STRATEGIES
• Increase Alberta's ability to attract research and development (R & D) investment from national and international sources. • Increase the investment in R & D from private and public sectors.	• Provide leadership and advocacy in working with Alberta universities to maximize the return on the public's investment in research, and to promote research excellence. • Increase investment by building partnerships and funding collaborative research through industry-led consortia. • Promote increased R & D investment by the pharmaceutical industry in Alberta. • Provide strategic leadership in interprovincial and national-level science and research matters through intergovernmental liaison. • Promote growth of the biotechnology sector. • Promote implementation of ASRA's ICT Strategy. • Promote strategic coordination and enhancement of health research. • Promote coordination of science and research initiatives among government departments including Greenhouse Gas Emissions, agriculture, forestry, and energy. • Coordinate with ARC to ensure international sales of technologies and licences. • Increase effectiveness in research through collaboration of agencies and researchers. • Provide support to research and technology development initiatives important to future economic development and sustainability through commercialization and the attraction of investment to Alberta. • Create the Alberta Heritage Foundation for Science and Engineering Research (AHFSER) to ensure a strong, long-term base of science and engineering research at our post-secondary institutions and in the industrial sector, to expand Alberta's emerging knowledge-based economy.

KEY PERFORMANCE MEASURE

In an "innovation-based economy", investment in science and R & D is the primary driver of business growth and success. By 2005, we are aiming for a total R & D investment from all three sources of $2 billion.

R & D INVESTMENT IN ALBERTA BY SOURCE



Source: Statistics Canada

GOAL 4: IN ALBERTA, THERE IS EFFECTIVE COMMERCIALIZATION AND ADOPTION OF SCIENCE AND TECHNOLOGY

OBJECTIVES	STRATEGIES
• Alberta will be the preferred location for technology development and business innovation in Canada. • Increase commercialization and application of the results of R & D in Alberta.	• Develop and promote network of University Technologies International (UTI) and the Industry Liaison Office (ILO) to actively encourage more companies to adopt new technologies. • Promote the Alberta Advantage to attract venture capital investments to Alberta. • Increase access to management and marketing assistance and provide information and support to facilitate adoption of research and technology development results. • Promote the use of electronic commerce among Albertans. • Promote and leverage the technology commercialization networks established in Alberta to maximize results. • Develop and implement a promotional package on the Alberta Advantage to key business ventures. • Promote economic development through the commercialization of research in existing and emerging industries and encourage the direct application of research in relevant public and private organizations.

KEY PERFORMANCE MEASURES

Business Innovation

To remain competitive on a long-term basis, Alberta businesses need to cultivate an innovative culture. Develop a measure showing the degree of adoption of new technologies by Alberta firms, as this reflects their desire for innovation and their future competitiveness. Use results of survey products currently being fielded by Statistics Canada.

Value-Added Industries

Alberta's economy is still strongly resource-based. Develop a measure on the expansion of Alberta's value-added industries, which support more stable, long-term economic growth. Use results of survey products currently being fielded by Statistics Canada.

GOAL 5: IN ALBERTA, THERE IS EFFECTIVE APPLICATION OF SCIENCE AND RESEARCH FOR IMPROVING STEWARDSHIP OF RESOURCES AND ENVIRONMENT

OBJECTIVES	STRATEGIES
• Provide enabling technologies for sustainable development of energy resources. • Provide enabling technologies for sustainable development of agriculture resources.	• Continue development of research and technology for future agriculture resources. • Continue development of research and technology for future energy resources. • Fund R & D that promotes environmentally sustainable development of Alberta's resources. • Increase effectiveness in research through collaboration of agencies and researchers. • Increase investment in research and R & D capacity related to environmental stewardship. • Together with Environment, continue to work on Greenhouse Gas management through Climate Change Central. • Refocus, reorganize, and build partnerships to stimulate energy-related research to address environmental concerns and reduce costs associated with energy development.

KEY PERFORMANCE MEASURES

Set targets for customer satisfaction and uptake of research.

GOAL 6: ALBERTA DEMONSTRATES EXCELLENCE IN THE DEVELOPMENT, DELIVERY AND USE OF INFORMATION, AND INFORMATION AND COMMUNICATIONS TECHNOLOGY IN THE DELIVERY OF GOVERNMENT SERVICES

OBJECTIVES	STRATEGIES
• Effective delivery of government programs through the innovative use of information and communications technology. • Efficient delivery of government services through standardization, cross-government initiatives and/or outsourcing. • Government demonstrates the effective use of information, and information and communications technology by adopting new technologies.	• Identify opportunities within the government which can be achieved through a shared service approach, thereby eliminating duplication of effort and investment. • Annually review and refine a corporate strategic framework for the use of information technology and information management initiatives, with input from ministries. • Lead information technology planning, standardization and ongoing development of a compatible, secure electronic information and communications infrastructure for government. • Harmonize, where appropriate, with national initiatives brought forward by the Public Sector CIO Council. • Facilitate the identification of best practices used inside and outside the public sector and facilitate their adoption enterprise-wide to achieve more effectiveness and efficiency. • Provide appropriate mechanisms to recognize and encourage both individuals and ministries to share solutions and best practices to develop information and communications technology solutions to common problems. • Develop cross-government information technology initiatives in partnership with Information Management and Technology Services, the Office of the CIO, Government Services and other departments. • Develop a corporate strategic framework for the use of information technology and information management initiatives with all ministries. • Continue to streamline and simplify access to government information through the "One-Window Access to Services" project, jointly with Government Services.

KEY PERFORMANCE MEASURES

Continue to develop measures for:

- Efficiency objective,
- Use of data standardization by ministries, and
- Use of data dictionary by ministries.

GOAL 7: ALBERTANS RECOGNIZE THE BENEFITS OF INNOVATION AND SCIENCE

OBJECTIVES	STRATEGIES
• Albertans understand the importance of science and research to their long-term prosperity and quality of life and support government investment in science and research.	• Promote science awareness and literacy. • Communicate with Albertans regarding Innovation and Science successes and their benefits to Albertans. • Work with provincial science and technology organizations to retain and increase industry support for research. • Work with provincial science and technology associations to promote increased application of research results by producers, processors, policy makers and the general public. • Work with key Alberta science, research and technology organizations to enhance the science culture and literacy within the province. • Work with other government departments to develop a high-speed technology infrastructure so that all Albertans can access government services.

KEY PERFORMANCE MEASURES

Continue to develop measure on student and parent perceptions of science and technology as a career choice.

Continue to develop measure on public perception of the benefits of innovation and science.

GOAL 8: THE MINISTRY OF INNOVATION AND SCIENCE LEADS AND SUPPORTS THE INNOVATIVE AND EFFECTIVE MANAGEMENT OF HUMAN RESOURCE CAPITAL

OBJECTIVES	STRATEGIES

• Maintain and increase staff skill, talent and understanding of innovation and science.
• Innovation and Science staff will demonstrate exemplary use and management of science, research, and information and communications technology.
	• In partnership with the Personnel Administration Office, develop:
	  • competency requirements for employees,
	  • policy regarding employee development/training (including targets), and
	  • a succession plan for employees.
	• Continue to implement the government Human Resource Strategy.
	• Provide cross-government leadership in the area of co-op programs, internship programs and MBA commercialization opportunities within the civil service.
	• Develop and implement a plan to ensure a positive work environment for employees including opportunities for development.

KEY PERFORMANCE MEASURES

Percentage of employees who understand how their work contributes to the Innovation and Science Business Plan.
Set targets based on data collected in 1999/2000.

Percentage of employees who are satisfied with their employment at Innovation and Science.
Set targets based on data collected in 1999/2000.

Development of supports and strategies for continuous learning.

Development of leadership continuity strategies for key positions.

Ministry Income Statement

(thousands of dollars)

	Comparable 1998-99 Actual	Comparable 1999-2000 Budget	Comparable 1999-2000 Forecast	2000-01 Estimates	2001-02 Target	2002-03 Target
REVENUE						
Internal Government Transfers	1,448	40,940	40,250	40,832	40,838	40,844
Transfers from Government of Canada	1,738	-	150	1,625	825	700
Investment Income	1,127	210	210	190	190	190
Other Revenue	49,180	51,441	53,531	68,982	73,243	78,086
MINISTRY REVENUE	53,493	92,591	94,141	111,629	115,096	119,820
EXPENSE						
Program						
Ministry Support Services	4,169	4,000	4,000	4,240	4,380	4,380
Office of the Chief Information Officer	1,817	1,800	1,800	1,810	1,820	1,820
Information Technology Services	55,171	57,623	59,866	73,380	69,300	70,040
Research and Technology Commercialization	1,347	3,200	3,200	4,140	3,660	3,660
Agriculture and Life Sciences Research	12,140	11,200	10,660	10,327	10,371	10,262
Energy Research and Development	15,279	9,000	9,000	6,500	6,500	6,500
Contract and Grants Administration	46,234	52,422	50,387	57,765	55,553	53,630
Alberta Research Council Inc.	47,772	52,398	55,505	63,441	65,870	73,030
Valuation Adjustment	451	-	-	-	-	-
Consolidated Expense	184,380	191,643	194,418	221,603	217,454	223,322
Gain (Loss) on Disposal of Capital Assets	(111)	-	-	-	-	-
Write Down of Capital Assets	(1,034)	-	(440)	-	-	-
NET OPERATING RESULT	(132,032)	(99,052)	(100,717)	(109,974)	(102,358)	(103,502)

Consolidated Net Operating Result

(thousands of dollars)

	Comparable 1998-99 Actual	Comparable 1999-2000 Budget	Comparable 1999-2000 Forecast	2000-01 Estimates	2001-02 Target	2002-03 Target
Ministry Revenue	53,493	92,591	94,141	111,629	115,096	119,820
Inter-ministry consolidation adjustments	(27,776)	(69,220)	(67,670)	(76,837)	(77,198)	(77,619)
Consolidated Revenue	25,717	23,371	26,471	34,792	37,898	42,201
Ministry Program Expense	184,380	191,643	194,418	221,603	217,454	223,322
Inter-ministry consolidation adjustments	(26,328)	(28,280)	(26,980)	(36,005)	(36,360)	(36,775)
Consolidated Program Expense	**158,052**	**163,363**	**167,438**	**185,598**	**181,094**	**186,547**
Gain (Loss) on Disposal of Capital Assets	(111)	-	-	-	-	-
Write Down of Capital Assets	(1,034)	-	(440)	-	-	-
Inter-ministry consolidation adjustments	-	-	440	-	-	-
CONSOLIDATED NET OPERATING RESULT	(133,480)	(139,992)	(140,967)	(150,806)	(143,196)	(144,346)